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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FCC MAIL ROOM

In the Matter of)

The 4.9 GHz Band Transferred from)
Federal Government Use)

WT Docket No. 00-32

To: The Commission

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APR 26 2000

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

COMMENTS OF GLOBAL FRONTIERS, INC.

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SUMMARY

Global Frontiers, Inc. ("Global"), supports regulation of the 4940-4990 MHz frequency band under Part 27 with provisions proposed by the Commission for flexible use of that spectrum to enable licensees to deploy advanced communications capability. Housekeeping changes, some of which are suggested in these Comments, will be needed to integrate the new frequency band into Part 27.

Also, Global strongly urges that Part 27 conform to the Commission's statutory authority by affording applicants an opportunity for negotiation to achieve engineering solutions to mutual exclusivity after short form applications are filed.

To facilitate the broadband uses necessary to advanced telecommunications services, the Commission should not limit bandwidth. Thus, both spectrum blocks and limits on aggregation should be rejected. If channelization should be employed, the channel blocks should be as large as possible. Pairing should not be mandated, since it would unnecessarily restrict flexibility of use.

Geographic service areas, if employed, should be the Economic Areas now provided in Part 26 of the Rules. In-band interference should be controlled by imposing at service area boundaries the same field strength limit now provided in Part 26, based on the proximity of the frequency bands and the similarity of services provided under Part 26 and proposed for 4940-4990 MHz under Part 27.

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The 4.9 GHz Band Transferred from)	WT Docket No. 00-32
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To: The Commission

COMMENTS OF GLOBAL FRONTIERS, INC.

Global Frontiers, Inc. ("Global"), pursuant to 47 CFR §1.415 and ¶109 of the Commission's Notice of Proposed Rulemaking in this proceeding (the "NPR"), submits these Comments.

Introduction

The NPR made extensive reference to the Petition for Rule Making filed by Global. See NPR at ¶¶2, 11, 12, 35, 45, 52, 93 and 115. Many of the proposals in the NPR were consistent with positions urged by Global in its Petition. To that extent, the NPR granted the Petition. See NPR at ¶¶2, 12 and 115.

In two principal respects, the NPR failed to follow Global's suggestions. First, it proposed placing the 4940-4990 MHz frequency band under Part 27 of the

FCC Rules instead of under Part 26, as had been proposed by Global. See NPR at ¶2 (also n.1 and ¶28, proposing to delete Part 26 from the Rules). Second, the Commission deferred, until such time as it reaches conclusions in another proceeding, any ruling on Global's contention that the Communications Act requires it to afford applicants an opportunity for negotiation of engineering solutions to mutual exclusivity before their applications are sent to auction. NPR at ¶93.

Global will separately address, under the first two main headings of these Comments, the two principal diversions from the proposals in its Petition. It will then, under the third main heading, address some of the specific issues on which the NPR requested comment.

I. Global Supports Regulation of the 4940-4990 MHz Band under Part 27, with Revisions

A. Part 27 Is Superior to Part 26 in Flexibility and Resultant Opportunity for New Technologies

Though Global proposed bringing the 4940-4990 Band under Part 26 largely because that was the band originally created for the frequencies for which the Department of Commerce later substituted 4940-4990 MHz, Global actually *prefers* the greater flexibility of use afforded by Part 27 provided adequate changes are made to Part 27 to accommodate the new frequency band.

In three significant respects, at least, Part 27 is superior to Part 26. It allows aggregation by licensees of frequencies without the bandwidth limitation imposed by §26.101. It allows geographic partitioning without the limitations imposed by §26.209 to rural telephone companies and established geopolitical boundaries. And it allows spectrum disaggregation. See §27.15. All three of these advances provide much-needed flexibility in the use of the spectrum, with consequent greater opportunity for companies like Global that seek to introduce new, technologically advanced services.

B. Housekeeping Revisions Will Need To Be Made to Part 27

Nevertheless, Part 27 in its proposed form is not usable for the 4940-4990 MHz frequency band without changes that have not been proposed in Appendix B to the NPR. For instance, though Appendix B proposes adding the 4940-4990 MHz frequency band to §27.1, it does not similarly propose adding 4940-4990 MHz to the list of frequencies in §27.5 that are denoted as "available for WCS." The effect of this omission is exacerbated by the cross-reference in §27.2, titled "Permissible communications," to §27.5 for the frequency bands in which services may be provided by Part 27 licensees.

Also, §27.10(a) indicates that authorizations may be granted under Part 27 for "broadcast." This should be qualified so it does not apply to the 4940-4990 MHz

band. Otherwise, it is inconsistent with the proposal in ¶1 of the NPR, which Global endorses, to allocate the band "for fixed and mobile services, except aeronautical mobile service." It is also inconsistent with the proposed revision in Appendix B of §2.106 of the Rules, which does not allocate the 4940-4990 band to non-federal government broadcast use in the United States.

Part 26, in §26.3, in permitting entities holding licenses issued under that part to provide "any fixed or mobile communications service," specifically prohibited "Broadcasting" services. If the 4940-4990 MHz band is to be brought under Part 27, "Broadcasting" should be similarly, and specifically, excluded from the services that §27.10 might otherwise suggest could be provided in that band.

Though ¶¶48 and 49 of the NPR seem to contemplate a ten-year term for licenses in the 4940-4990 MHz frequency band, no rule is proposed in Appendix B for Part 27 prescribing that or any other period for licenses. Compare the provision for a ten-year license period in §26.13 under Part 26. The text of §26.13 should be incorporated into §27.13 as a new sub§(c).

Part 27 requires, in §27.206(c), that a high bidder submit a "long-form application." But it does not specify what form that is. Presumably §1.913(a)(1) would make Form 601 the appropriate form, but §1.913(a)(1) does not use the term "long-form application" and failure of Part 27 to refer to §1.913(a)(1) or to the "Universal Licensing System," except by definition in §27.4, casts some doubt. If Form 601 is

indeed the appropriate long form, or even more important if it is not, a specific reference to the correct form by number should be made in §27.206(c), similar to the numerous references in §§27.204 and 27.210(c) to submission of a "short-form application (Form 175)."

II. The Commission Is Required by Statute To Provide For Avoidance of Mutual Exclusivity Through Negotiation and Engineering Solutions

The other principal diversion in the NPR from the proposals in Global's Petition was in the Commission's failure to endorse Global's contention that the Communications Act requires that applicants be afforded an opportunity to devise engineering solutions to mutual exclusivity through negotiation prior to being sent to auction. Global requested that the Commission fulfil its obligation imposed by §309(j)(6)(E) of the Act by to use engineering solutions and negotiation to avoid mutual exclusivity, by providing an opportunity for applicants to negotiate such solutions after filing their short-form applications. See pp. 13-17 of Global Petition and ¶¶12 and 93 of the NPR. Global suggested regulatory language that would afford that opportunity to applicants. See pp. 15-16 of Exhibit No. 3 to Petition.

In ¶93 of the NPR, the Commission responded to Global's request by saying it intended to adhere to whatever conclusions it reached as to its obligations under §309(j)(6)(E) in a pending rule making proceeding it had initiated in March 1999.

See Notice of Proposed Rule Making , Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended, FCC 99-52, WT Docket No. 99-87, 14 FCC Rcd 5206 (1999). In that March 1999 Notice ("BBA NPRM"), the Commission sought comment on a wide range of issues arising from Title III ("Communications and Spectrum Allocations") of the Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 (Aug. 5, 1997). One section of the BBA NPRM (§§58-64 on pp. 5235-39) was devoted to the "Obligation to Avoid Mutual Exclusivity."

As noted in §60 of the BBA NPRM, and also on page 16 of Global Frontiers' Petition, the Balanced Budget Act retained the Commission obligation to avoid mutual exclusivity through use of negotiation and engineering solutions. That obligation had been added as part of paragraph (6)(E) of §309(j) of the Communications Act when Congress in 1993 first authorized selection among mutually exclusive applicants by auction. Congress further highlighted that obligation in 1997 by adding to §309(j), in the introductory paragraph providing the general authority for auctions, a special requirement that acceptance of any mutually exclusive applications and grant of a license or permit to an applicant by competitive bidding be "consistent with the obligations described in paragraph (6)(E) ." See 111 Stat. 258 (1997).

The Conference Report that accompanied the 1997 Balanced Budget Act said the reason for this added language was to "emphasize" that the Commission "must"

assure compliance with its obligations under paragraph (6)(E), and that it not "minimize" those obligations, "thus overlooking engineering solutions, negotiations, or other tools that avoid mutual exclusivity." H.R. Report No. 105-217, p.572 (July 30, 1997). A letter the next year to the Chairman of the Commission signed by the Senate Minority Leader, three other Senators from both parties, all with seats on the Communications Subcommittee of the Senate Commerce Committee, and the Chairmen of the House Commerce Committee and its Telecommunications Subcommittee, asserted that the explanation Congress had provided for the 1997 change was "unambiguous." It expressed concern that the Commission had, since the 1993 Act was passed, "frequently ignored this provision of the law." Referring to the special reference to paragraph (6)(E) added to the statement of auction authority in the 1997 Act, the letter said:

"Congress did not engage in an idle act when it legislated this change. It did so for a reason. The Commission must not ignore what Congress enacted by reading this provision out of the law and adopting policies inconsistent with statutory requirements."

See letter of December 28, 1998, referred to in footnote 172 to ¶60 on page 5235 of the BBA NPRM.

As indicated in ¶¶61-63 of the BBA NPRM, the Commission had indeed, between the enactment of the 1993 Act and its amendment in 1997, felt unconstrained by §309(j)(6)(E) where it deemed the establishment of geographic area licensing to be in the public interest, notwithstanding its greater potential for mutual exclusivity

than site-by-site licensing with frequency coordination. Whether the language of the 1997 amendment, read in light of the Conference Report, was "unambiguous" as asserted in the Congressional Letter, and whether it resolved the "precise question" of whether the Commission has authority to use a geographic licensing scheme notwithstanding its greater potential for creating mutual exclusivity, is something the Commission will now have to resolve in a manner that it concludes will withstand review under *Chevron U.S.A. v. NRDC*, 467 U.S. 837, 842 (1984), as applied to the pre-1997 version of §309(j) in *Fresno Mobile Radio v. FCC*, 165 F.2d 965, 968 (D.C. Cir. 1999).

But, assuming the Commission can determine to its satisfaction that it is not operating in excess of its statutory authority when it uses a geographic licensing scheme such as that in Part 27 of its Rules, it must certainly recognize that the amended §309(j)(1) and §309(j)(6)(E) are accorded no recognition at all if the rules make no provision for, and indeed expressly forbid, applicants for geographic area permits to negotiate with each other and propose engineering solutions to mutual exclusivity before being forced into auctions. Yet that would be exactly the situation if Part 27 is not amended at least generally in line with the amendment suggested for Part 26 on pages 13-14 of Global Frontiers' Petition and pages 15-16 of Exhibit No. 3 to that Petition. Granting permits and licenses by competitive bidding without such an amendment would clearly be in excess of statutory authority, without even a nod toward avoidance of mutual exclusivity.

Particularly with respect to a frequency band for which the Commission is making only a "broad and general allocation" to "*any* fixed or non-aeronautical mobile service use," so "licensees will be able to offer a wide range of services employing varying technologies" (NPR at ¶19, emphasis added), there is no way that potential applicants can know the identity of all other potential applicants before they file their "short form" applications. So there is no possibility until the applications are filed for any comprehensive negotiation looking to engineering solutions that avoid mutual exclusivity.

At the point where short form applications have been filed, not only is there no provision in the rules for negotiation looking toward engineering solutions, it is **expressly forbidden**. Section 27.204 (c), titled "Prohibition of collusion," states that except in certain instances, which are not applicable to negotiation to try to achieve engineering solutions to mutual exclusivity, "all applicants are prohibited from "cooperating, collaborating ... or discussing or negotiating settlement agreements."

Thus, without amendment, the applicants would be required to go to auction even though an auction could be avoided by working out an engineering solution that would eliminate mutual exclusivity. It is impossible to reconcile that requirement of an auction irrespective of the availability of an engineering solution with the statutory authority given by Congress to the Commission, in §309(j)(1) of the

Communications Act, to grant licenses by auction only if "consistent with the obligations described in paragraph (6) (E)."

Paragraph (6)(E) places the Commission under an obligation "to use engineering solutions [and] negotiation ... in order to avoid mutual exclusivity." It is also impossible to reconcile an auction in these circumstances with the recognition by the Commission itself, in the "Big LEO Report and Order" cited in ¶61 n.179 of the BBA NPR, that it construes 309(j)(6)(E) "to mean that the Commission is obliged to attempt to eliminate mutual exclusivity." 9 FCC Rcd 5936 at ¶71. See also the Commission's action approving an orbital assignment plan for space stations, described in the Order by the Chief of the International Bureau as a "direct result of the applicants' successful efforts to resolve their conflicts over orbital locations for satellites in all portions of the world." *Assignment of Orbital Locations to Space Stations in the Ka-Band*, DA 97-967 at ¶2 (May 9, 1997).

The statutory problem regarding applicants in the 4940-4990 MHz Band could be solved if the Commission, upon receipt of multiple applications for a particular frequency block in a particular geographic area, were to (1) notify all applicants of the identity of the other applicants, and (2) pause for a reasonable time before accepting the applications, in order to permit the applicants to confer with one another to see if an engineering solution to mutual exclusivity can be worked out. Global Frontiers has suggested a consultation period of ninety days, upon request of

the applicants. The ninety day period could be shortened if the applicants, before the end of the period, advised the Commission that no engineering solution to mutual exclusivity was possible.

If, on the other hand, the applicants should be able to arrive at what they deemed to be an engineering solution to mutual exclusivity, they would present that proposed solution to the Commission with long form applications. The Commission could then make its own determination as to whether the applications were not mutually exclusive, and hence acceptable and grantable without an auction. See ¶¶(b) and (c) on pages 15-16 of Exhibit No. 3 to Global Frontiers' Petition, which could be added with conforming changes to §27.201 of the Rules.

In the absence of the addition of some such procedure for negotiation among applicants and engineering solutions to mutual exclusivity, Global Frontiers suggests that the Commission would be plainly acting in excess of the authority given it by Congress. The Commission should recognize that and provide in Part 27 for a period of negotiation and consultation among applicants to avoid mutual exclusivity. In order to assure compliance with the statute, it should do this even if the BBA NPRM proceeding should not be concluded by the time it is ready to act in this proceeding, or if it should be concluded in a way that fails to address situations such as will be presented if the 4940-4990 frequency band is broadly allocated for flexible uses such as is proposed in the NPR.

III. Global's Views on Other Issues

The NPR requests comment on a number of issues, some of which are now discussed under an indication in each instance of Global's position followed by a discussion of the means by which it believes the utility of the rules and their public benefits can be enhanced.

A. The Commission Should Not Limit the Bandwidth That Can Be Acquired by a Single Licensee

Global supports the Commission's tentative conclusion not to limit the amount of spectrum that a licensee may aggregate in a single geographic area within the 4940-4990 MHz band (NPR at ¶35). Though Global proposed in its Petition merely to increase the size of the frequency blocks provided in Part 26 and raise the limit on the number of blocks that could be aggregated by a single licensee, it did so in order to maintain the general scheme of that part. Global also made plain that it questioned the need for "*any* channelization," and said it believed "the public interest would be better served by *no* limitation" (Petition at p.11, emphasis in original).

As Global asserted in its Petition (pp. 8-10), and as the Commission has already recognized in a February 1999 Report (quoted in Petition at p.9), the public benefits that can result from advanced telecommunication capability require sufficient bandwidth to transport large amounts of information. Insufficient bandwidth

was assessed by Wall Street financial analysts and by the Commission's own technical staff as a likely cause of the apparent lack of interest in the GWCS frequencies when the Commission proposed to auction them under Part 26 (Petition at p.8).

Global's own planned new service, which would afford Internet users a simple, rapid and economical means of downloading large amounts of data and other information, requires a minimum non-paired bandwidth of at least 39 MHz (see Petition at p.8). That bandwidth might well not be available if there were a spectrum cap within the 4940-4990 frequency band.

B. The Commission Should Prescribe the Same Economic Areas as under Part 26

Assuming the Commission is able to conclude that the use of *any* geographical service areas, rather than site-by-site licensing, is consistent with its statutory authority (see discussion at p.8 *supra*), Global urges adoption of the same Economic Areas ("EAs ") and EA-like areas prescribed in §26.102 of the Rules. That could be accomplished by incorporating the text of §26.102 into §27.6 as a new sub§(c) with only minor technical changes.

The only other geographical areas suggested in the NPR are larger than EA's (NPR at ¶42). Selection of the appropriate geographical area is, as the Commission suggests (NPR at ¶43), a matter of balancing competing considerations. When the

Commission proposed issuance of GWCS licenses based on MTA's, FCC 95-47, 10 FCC Rcd 4769 at ¶79 (1995), a majority of those supporting the new service opposed licensing on an MTA basis and urged smaller license regions. FCC 95-319, 11 FCC Rcd 624 at ¶53 (1995).

The Commission concluded in that proceeding that issuing GWCS licenses based on the smaller EA areas "appears to be more consistent with the likely uses of GWCS licenses than use of MTAs and will increase opportunities for small businesses and other designated entities to obtain GWCS licenses." *Id.* at ¶56. Since the permissible uses of the 4940-4990 MHz frequency band proposed in this proceeding, *i.e.*, "any fixed, land mobile, or maritime mobile service" (NPR at ¶19), are effectively the same as the permissible uses for the GWCS provided in §26.3 of the Rules, *i.e.*, "any fixed or mobile communications service," the same analysis would apply.

C. If the Commission Must Prescribe Spectrum Blocks, They Should Be as Large as Possible

Global has already made clear its view that, in order to afford maximum benefit to the public from advanced technological services, there should be *no* channelization of the frequencies within the 4940-4990 MHz band. *Supra* at p.12, Global Petition at p.11.

If the Commission nonetheless decides to channelize the 4940-4990 band into spectrum blocks, it should afford adequate bandwidth in those blocks to permit their use for broadband services. For instance, since the service that Global wishes to provide requires a bandwidth of at least 39 MHz, if the band were divided into five blocks of 10 MHz width each, Global's ability to render its service would be dependent on its ability to acquire four contiguous blocks. Other broadband services might have to acquire all five blocks.

The Commission has suggested as a possible alternative two 25 MHz licenses in each geographic area. That would reduce the number of blocks that Global and other applicants would have to acquire in order to render broadband services. The Commission also raised the possibility of *different* sized blocks. Two blocks of 40 MHz and 10 MHz would enable Global to acquire the necessary bandwidth without having to aggregate adjoining blocks. If the different sized blocks were 30 and 20 MHz, then as in the case of two 25 MHz blocks it would require Global, and in all likelihood others as well, to acquire both blocks in order to provide the public benefits of broadband services.

The most desirable course, in order to attract maximum interest in the band and afford maximum public benefits from its use, would be to impose *no* spectrum blocks.

**D. The Commission Should Not Auction the 4940-4990
MHz Band in Paired Spectrum Blocks**

Global vigorously opposes mandating that the 4940-4990 MHz frequency band be used in paired spectrum blocks, as suggested in ¶46 of the NPR. Global is not opposed to individual zones being used by successful bidders who wish to do so. However, including a rule pairing this spectrum would be an inefficient allocation and would effectively preclude use of much of the spectrum by applicants who desire no paired transmission.

Paired spectrum as an *a priori* rule would prevent its use by those desiring to use the whole block for broadband transmission in one direction, a use that Congress in §706(a) of the Telecommunications Act of 1996 called "advanced telecommunications capability." See 47 U.S.C. §157 Note (Supp. 1996) and ¶1 of the Report titled *Inquiry Concerning the Deployment of Advanced Telecommunications Capability*, FCC 99-5, CC Docket No. 98-146, 14 FCC Rcd 2398 (1999). See also the first sentence of the separate statement issued by Chairman William Kennard with that Report:

"Promoting the deployment of advanced telecommunications capabilities to all Americans is at the top of my agenda" 14 FCC Rcd at 2461.

Internet users download many more large files than they upload. The need for broadband capability in the download-to-the-user direction is far greater than the need for transmission in the other direction.

Most of the frequencies now governed by Part 27 are assigned by §27.5 to paired channels. Of the 66 MHz of spectrum under Part 27, only 10 MHz is not paired. It is in two blocks of only 5 MHz each. What is needed now is deployment under Part 27 of some truly *broadband* capability, in accordance with the Congressional and FCC Chairman's stated priorities.

E. The Commission Should Establish a 55 dBu Field Strength Limit at Service Area Boundaries

The scheme of Part 27 for in-band interference control is to require adherence to stated field strength limits at service area boundaries in the absence of agreement to a higher limit by licensees in affected areas (§27.55). At the same time, Part 27 preserves the right of licensees who feel that their particular circumstances require greater protection to seek a Commission determination that they are suffering interference; and preserves the right of the Commission, after notice and an opportunity for a hearing, to require modifications by the interfering station (§27.64).

This is a scheme that is both streamlined and fair, and should be preserved. It achieves the Commission's stated objective "to ensure that licensees receive protection from harmful interference with the minimum regulation necessary."

See *47 GHz Notice*, FCC 98-142, WT Docket No. 98-136, 13 FCC Rcd 16947 at ¶125 (1998). It is vastly superior to the cumbersome coordination procedures in §101.103 of the Rules for licensees in other frequency bands.

As recently as January of this year, in rejecting frequency coordination procedures in favor of border-area field strength limits for one of the other Part 27 bands, the Commission recognized that a general frequency coordination requirement may also "impose unnecessary coordination costs for facilities that are not likely to cause interference, and could lead to possible anti-competitive activities." *Service Rules for the 746-764 and 776-794 MHz Bands*, FCC 00-5 at ¶96, WT Docket No. 99-168 (Jan. 7, 2000). It noted that not a single commenter in that proceeding favored the coordination approach for controlling in-band interference. *Id.* at ¶95.

The field strength limits approach is also consistent with the Commission's statutory mandate to promote rapid deployment of new technologies and services without administrative delays. See 47 U.S.C. §309(j)(3)(A).

The appropriate field strength limit for the 4940-4990 MHz frequency band is 55 dBu, the same limit provided in §27.55 for the 4660-4685 "GWCS" frequencies. This is a conservative limit, providing more protection to licensees in contiguous zones than the field strength limits in §27.55(a) and (b) for either of the present WCS frequency bands. It could be accomplished by simply amending §27.55 to add a new subsection that reads: "(c) 4940-4990 MHz band: 55 dBuV/m."

The 4940-4990 MHz band is in the same general frequency range as was the 4660-4685 GWCS band. Under the proposal in the NPR, it will be allocated for basically the same flexible use -- "fixed and mobile services, except aeronautical mobile service." Compare NPR at ¶1 with §26.3. Therefore, the same analysis that accompanied the Commission's proposal to adopt a 55 MHz limit on field strength for the GWCS band applies here.

In its GWCS NPRM, the Commission noted that technical operating parameters would have to accommodate both fixed and mobile services and, to that end, concluded that the rules adopted for PCS provided the best model for that new band:

"Specifically, we propose to limit the field strength at licensees' service boundaries to 55 dBu unless licensees operating in adjacent areas agree to higher field strength limits along their mutual border." *Allocation of Spectrum Below 5 MHz Transferred from Federal Government Use*, 10 FCC Rcd 4769 at ¶121 (1995).

In a footnote to that sentence, the Commission provided further detail as to its rationale:

"The minimum field strength required for a good quality service for mobile reception in an urban environment is 35 dBu (CCIR Report 358-5) and the proposed 55 dBu field strength limit allows 20 dBu additional for location variability."

It should also be noted that, in the 700 MHz proceeding last January that is cited at p. 18 *supra*, the Commission adopted the same geographic border field


strength limit for that band as it had adopted for the 800 and 900 MHz bands "[b]ecause the types of services that will be provided in the 700 MHz band are likely to be similar to the types of services permitted in the 800 and 900 MHz bands, and because of its proximity to these bands." *Id.* at ¶97. The precise same reasoning applies here.

Conclusion

Global Frontiers, Inc., urges the Commission to make the 4940-4990 MHz frequency band available as soon as possible for use in serving the public interest with new broadband technologies, in accordance with the views expressed in these Comments.

Respectfully submitted,

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